

Packet Tracer - Verify IPv4 and IPv6 Addressing

Addressing Table

Device	Interface	IP Address / Prefix		Default Gateway
R1	G0/0	10.10.1.97	255.255.255.224	N/A
		2001:db8:1:1::1/64		
	S0/0/1	10.10.1.6	255.255.255.252	N/A
		2001:db8:1:2::2/64		
		fe80::1		
R2	S0/0/0	10.10.1.5	255.255.255.252	N/A
		2001:db8:1:2::1/64		
	S0/0/1	10.10.1.9	255.255.255.252	N/A
		2001:db8:1:3::1/64		
		fe80::2		
R3	G0/0	10.10.1.17	255.255.255.240	N/A
		2001:db8:1:4::1/64		
	S0/0/1	10.10.1.10	255.255.255.252	N/A
		2001:db8:1:3::2/64		
		fe80::3		
PC1	NIC	10.10.1.100	255.255.255.224	10.10.1.97
		2001:DB8:1:1::A/64		fe80::1
PC2	NIC	10.10.1.20	255.255.255.240	10.10.1.20
		2001:db8:1:4::A/64		fe80::3

Objectives

Part 1: Complete the Addressing Table Documentation

Part 2: Test Connectivity Using Ping

Part 3: Discover the Path by Tracing the Route

Background

Dual-stack allows IPv4 and IPv6 to coexist on the same network. In this activity, you will investigate a dual-stack implementation including documenting the IPv4 and IPv6 configuration for end devices, testing connectivity for both IPv4 and IPv6 using **ping**, and tracing the path from end to end for IPv4 and IPv6. Complete the Addressing Table Documentation

Step 1: Use ipconfig to verify IPv4 addressing.

- Click **PC1** and open the **Command Prompt**.
- Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway. ✓
- Click **PC2** and open the **Command Prompt**.
- Enter the **ipconfig /all** command to collect the IPv4 information. Fill-in the **Addressing Table** with the IPv4 address, subnet mask, and default gateway. ✓

Step 2: Use ipv6config to verify IPv6 addressing.

- On **PC1**, enter the **ipv6config /all** command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway. ✓
- On **PC2**, enter the **ipv6config /all** command to collect the IPv6 information. Fill-in the **Addressing Table** with the IPv6 address, subnet prefix, and default gateway. ✓

Part 2: Test Connectivity Using Ping

Step 1: Use ping to verify IPv4 connectivity.

- From **PC1**, ping the IPv4 address for **PC2**.

Was the result successful? *yes*

- From **PC2**, ping the IPv4 address for **PC1**.

Was the result successful? *yes*

Step 2: Use ping to verify IPv6 connectivity.

- From **PC1**, ping the IPv6 address for **PC2**.

Was the result successful? *yes*

From **PC2**, ping the IPv6 address of **PC1**.

Was the result successful? *yes*

Part 3: Discover the Path by Tracing the Route

Step 1: Use tracert to discover the IPv4 path.

- From **PC1**, trace the route to **PC2**.

PC> **tracert 10.10.1.20**

What addresses were encountered along the path?

With which interfaces are the four addresses associated

- From **PC2**, trace the route to **PC1**.

10.10.1.17 Default Gateway R1
10.10.1.5 R1
10.10.1.10 R3
10.10.1.20 Destination

What addresses were encountered along the path?

With which interfaces are the four addresses associated?

10.10.1.17 R3
10.10.1.9 R2
10.10.1.6 R1
10.10.1.100 Dest

Step 2: Use tracert to discover the IPv6 path.

- a. From **PC1**, trace the route to the IPv6 address for **PC2**.

PC> `tracert 2001:db8:1:4::a`

What addresses were encountered along the path?

With which interfaces are the four addresses associated?

DB8:1:1::1 Gateway
DB8:1:2::1 R2
DB8:1:3::2 R3
DB8:1:4::A Dest

- b. From **PC2**, trace the route to the IPv6 address for **PC1**.

What addresses were encountered along the path?

With which interfaces are the four addresses associated?